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A call admission control technique allowing flexible and reliable call admissions at an ATM switch in the case of an ATM network including both QoS-specified and QoS-unspecified virtual connections is disclosed. In the case where a QoS (Quality of Service) specified connection request occurs, an estimated bandwidth is calculated which is to be assigned to an existing QoS-unspecified traffic on the link associated with the QoS-specified connection request. A call control processor of the ATM switch determines whether the QoS-specified connection request is accepted, depending on whether a requested bandwidth is smaller than an available bandwidth that is obtained by subtracting an assigned bandwidth and the estimated bandwidth from a full bandwidth of the link.